2017 Water Quality Report

CITY OF BROOKFIELD WATER UTILITY

Brookfield, WI 53045 JUNE 2018

General Information

The City of Brookfield Water Utility is governed by the Public Service Commission of Wisconsin and is monitored by the Wisconsin Department of Natural Resources. Locally, the Utility reports to the City of Brookfield Water and Sewer Board and Common Council.

Municipal water is tested on a weekly basis for any bacteriological contamination throughout its distribution system. Water at each well, before treatment is added, is tested on a quarterly basis. Additional testing is performed twice weekly by the utility to measure the amount of chlorine, phosphate and iron oxides in the water

The City of Brookfield tests your water for over 100 chemicals and compounds, including lead, copper, Volatile Organic Compounds (VOC's), Synthetic Organic Compounds (SOC's), pesticides and organic compounds. These tests ensure the quality of your drinking water, providing you with a safe and ample supply of water for your needs.

In compliance with Federal regulations, this report is published annually and sent to all customers. Even though there are some detections, the levels of these detections are below the safe drinking water standards, with the exception noted below. **Our water is safe to drink**. Not listed in this report are the numerous other contaminants for which we tested but were not detected.

The City has one well, the Bishops Woods well, that exceeded the Radium 226/228 MCL in 2017. Compliance with the Radionuclide standards is based on the average radium level over 4 quarters. To date the City remains in compliance with the regulations. The City is closely monitoring the radium levels at this well and working closely with the Wisconsin DNR if future treatment is required.

Monitoring and Reporting Violation Volatile Organic Contaminants and Synthetic Organic Contaminants – Three total samples were missed in 2017. Compliance samples were not taken because the wells were out of service at the time. The sample schedule has been re-enacted now that wells are back in service.

Detected Contaminants—Your water was tested for many contaminants last year. We are allowed to monitor for some contaminants less frequently than once a year. The following tables list only those contaminants which were detected in your water. If a contaminant was detected last year, it will appear in the following tables without a sample date. If the contaminant was not monitored last year, but was detected within the last 5 years, it will appear in the tables below along with the sample date.

The City of Brookfield Water and Sewer Board generally meets the 2nd Tuesday of the month. Please call City Hall at 262-782-9650 or visit the City's web site *www.ci.brookfield.wi.us* for location and time of meetings.

Water and Sewer Board Members:

Alderman Christopher Blackburn, Chairman
Alderman Scott Berg
Alderman Bill Carnell
Alderman Jeff McCarthy
Alderman Gerald Mellone

Other contacts:

Brookfield Water Utility
19700 Riverview Drive
Brookfield, WI 53045
262-796-6717
John Carlson
Water Superintendent

Department of Natural Resources
Waukesha Office
Thanintr Ratarasarn
262-574-2134

Regulated Compounds						
Contaminant	**Result (Range)**	**MCL**	**MCLG**	**Sample Date (if prior to 2017)**	**Violation**	**Source**
Inorganic Compounds						
Arsenic (ppb)	0 – 6	10	N/A		No	Erosion of natural deposits
Barium (ppm)	0.019 – 0.160	2	2		No	Erosion of natural deposits
Cadmium (ppb)	0.0 – 0.1	5	5		No	Erosion of natural deposits
Fluoride (ppm)	0.2 – 0.8	4	4		No	Erosion of natural deposits
Nickel (ppb)	1.3 – 22.0	100	N/A		No	Occurs naturally in soils and groundwater
Nitrate (ppm)	0 – 0.84	10	10		No	Runoff from fertilizer use. Erosion of natural deposits
Sodium (ppm)	11.0 – 160.0	N/A	N/A		No	Not applicable
Synthetic Organic Contaminants						
DI(2-ethylhexyl) phthalate (ppb)	0.0 – 1.4	6	0		No	Discharge from rubber and chemical factories
Radioactivity						
Combined Uranium (ug/l)	0 – 1.0	30	0		No	Erosion of natural deposits
Gross Alpha excl R & U (pCi/l)	1.7—12.0	15	0		No	Erosion of natural deposits
Gross Alpha incl R & U (pCi/l)	1.7—12.0	n/a	n/a		No	Erosion of natural deposits
Radium 226/228 (pCi/l)	3.5—8.1	5	0		No	Erosion of natural deposits
Volatile Organic Contaminants						
TTHM (ppb)	11.8 - 41.6	80	0		No	By-product of drinking water chlorination
HAA5 (ppb)	4 - 8	60	60		No	Disinfection by-product

Lead & Copper						
Contaminant	**Action level**	**90th Percentile Level Found**	**# Results**	**Sample Date (if prior to 2017)**	**Violation**	**Typical Source of Contamination**
Copper (ppm)	AL = 1.3	0.8600	1 of 30 results were above the action level	2016	No	Corrosion of household plumbing. Erosion of natural deposits. Leaching from wood preservatives
Lead (ppb)	AL = 15	13.0	3 of 30 results were above the action level	2016	No	Corrosion of household plumbing systems; Erosion of natural deposits.

Microbiological Contaminant					
Contaminant	**Level Found**	**# of tests**	**MCL**	**Sample Date (if prior to 2017)**	**Source**
Coliform	0	360	Presence of coliform bacteria in >= 5% of monthly samples		Naturally present in the environment

Unregulated Contaminants			
Contaminant	**Result (Range)**	**Sample Date (if prior to 2017)**	**Source**
1,1-dichloroethane (ppb)	0.130	2015	Chemical manufacturing
1,4-dioxane (ppb)	0.1 -0 .7	2015	By-product of paint strippers, dyes,
Chlorate (ppb)	21-83	2015	Disinfection by-product
HCFC-22 (ppb)	0.13	2015	Refrigerant
Methyl-Tert-Butyl-Ether (ppb)	0.25	2013	Gasoline spills
Molybdenum (ppb)	1.4 – 14.5	2015	Erosion of natural deposits
Naphthalene (ppb)	0.25		By-product of insecticides
Sulfate (ppm)	62 - 190		Erosion of natural deposits
Strontium (ppm)	1.2 – 40.5	2015	Erosion of natural deposits
Vanadium (ppb)	0.5	2015	Erosion of natural deposits

Definitions to help you understand your report

MCLG - Maximum Contaminant Level Goal - the level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MCL - Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

PPM - Parts per Million - One part per million is the equivalent of ½ of a dissolved aspirin tablet in a full bathtub of water (approximately 50 gallons).

PPB - Parts per Billion - One part per billion is the equivalent to ½ of a dissolved aspirin tablet in 1,000 bathtubs of water (approximately 50,000 gallons).

mg/L - Milligrams per liter - see parts per million.

pCi/L - picoCuries per liter (one trillionth of a curie) - a measurement of radioactivity.

ug/L—Micrograms per liter—see parts per billion

AL - Action Level – The concentration of a contaminant that triggers treatment or other requirements that a water system must follow. Action levels are reported at the 90th percentile for homes at greatest risk.

TCR – Total Coliform Rule

TT - Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water

Quality On Tap!

Our Commitment Our Profession

Health Information

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791 or *www.epa.gov/safewater.*

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek the advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791) or *www.epa.gov/safewater*.

Lead – If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Brookfield Water Utility is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

Copper – Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult with their personal doctor.

Combined Radium 226/228 – Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting bone cancer.

Gross Alpha, Excl. R & U - Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.

Coliforms – Coliforms are bacteria which are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present.

Arsenic – While your drinking water meets USEPA's standard for arsenic, it does contain low levels of arsenic. USEPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. USEPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Educational Information

The City of Brookfield maintains 22 wells throughout the City. The water is then distributed into 3 pressure zones. All of our water comes from these wells and is considered "ground" water. The City of Brookfield **does not** currently receive Lake Michigan water from Milwaukee.

If you would like more information on the wells in your particular area, please contact the water utility at 262-796-6717, between the hours of 7:00 am and 3:30 pm, Monday through Friday.

The sources of drinking water, both tap water and bottled water, include rivers, lakes, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally- occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which shall provide the same protection for public health.